FRBSF Weekly Letter

March 17, 1989

Banks' Cost of Capital

Bank and bank holding company (BHC) capital regulation is becoming an increasingly important tool to limit bank risk taking and thereby the risk exposure of the deposit insurance system. More capital relative to assets provides a greater cushion to absorb any given loss and minimizes the spillover to the deposit insurance fund. Moreover, increased capital reduces banks' incentives to increase asset risk and thus to risk bankruptcy. Thus, an increase in banking organizations' capital-to-asset ratios over time should reduce the risk of bank failures and reduce the risk exposure of the deposit insurance fund.

However, many bankers appear reluctant to issue additional common stock, arguing that doing so is very costly compared to raising funds from other sources. This *Letter* examines evidence on the stock market's reaction to the issuance of various securities by BHCs to determine why common stock might be a more costly source of funds and what implications this has for the formulation of capital regulations.

Capital regulation

Bank and BHC capital regulation was first strengthened in December 1981 when objective minimum standards were introduced in a departure from the subjective, peer-group type of capital regulation used previously. In 1983, these standards were extended to include the multinational BHCs and in 1985, a single minimum standard was adopted for all BHCs, regardless of size. More recently, the Board of Governors of the Federal Reserve System and the other banking regulatory agencies adopted an even more stringent, risk-based standard for banks and BHCs as part of an international agreement among the twelve leading industrial countries. These new requirements became effective February 15, 1989.

To meet these ever more stringent capital-to-asset requirements, many banks and BHCs are having to sell assets and/or increase capital. Banking organizations can increase capital several ways: by retaining a higher proportion of their current earnings and/or by raising external capital through the sale of common stock, preferred stock, mandatory convertible debt, convertible debt, or long-term subordinated debt. The approach taken by any given banking organization will depend on which is the least costly and also whether there is regulatory pressure to adopt one particular approach. To the extent these two criteria are in conflict, regulators need to determine whether requiring a more costly approach to raising capital is justified.

The stock market's reaction

The stock market's reaction to the issuance of securities by banking organizations may provide useful insights into the cost of issuing various types of capital and the reasons why one type might be more costly than others. A securities issuance that imposes costs on a banking organization should affect the market's valuation of the firm and lead to a fall in the firm's stock price.

Moreover, since the stock market reacts quickly to new information, the effects of a new security issuance on the market's valuation of a firm likely will show up in the firm's stock price at the time the security issuance is announced. Thus, stock-price reactions to the announcement of a security issuance provide information on the market's assessment of the net costs to the issuer. I have conducted a study of the stock-price reactions to 155 securities issuances by 34 BHCs from 1975 to 1986 using statistical techniques to measure the valuation effects of the announcement of the security issuance and to control for other factors that also might have affected the issuer's stock price on the day of the announcement. The findings of that study, which were published in the Winter 1989 issue of this Bank's *Economic Review*, are summarized below.

Common stock issuance

Over the entire 1975–1986 period, BHCs' common stock prices fell on average by a statistically significant one and one-half percentage points when a new common stock issuance was announced. Similar results have been found by

other researchers. Moreover, the magnitude of the dilution effects implied by these stock-price declines is large; the value of BHCs' existing shares declined by an amount equal to approximately 30 percent of the value of the funds raised. In other words, an issue that raised $100 million, for example, would have increased a bank's net capital by only $70 million.

On the surface, these results appear to support bankers' contentions that raising capital in the form of common stock is costly. There are, however, several difficulties in interpreting these results in this simple manner. First, even larger negative stock-price effects have been found for industrial firms that *voluntarily* issue common stock. Presumably, if there were less costly sources of funds available to these industrial firms, they would not have chosen voluntarily to issue common stock.

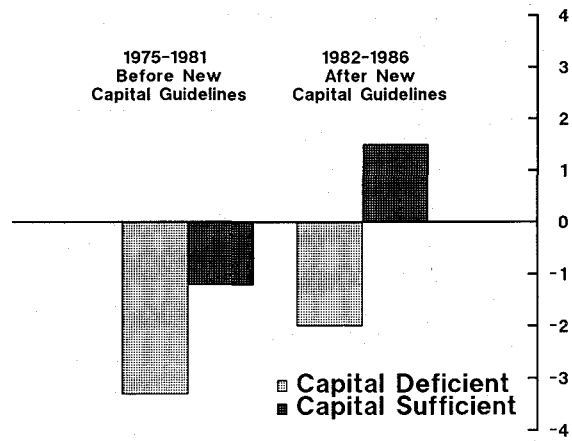
Second, as mentioned above, one reason for requiring banks and BHCs to issue capital is to reduce the risk exposure of the deposit insurance fund. Banking organizations for which deposit insurance is underpriced are receiving a valuable subsidy, and their stock prices will reflect this. Therefore, requiring them to raise additional capital will reduce the value of this subsidy and may, as a result, cause their share prices to fall. Bankers in this situation would view the issuance of additional common stock as a costly way to raise funds. However, this is hardly reason for bank regulators to allow them to raise funds from other, less costly sources, unless those other sources commensurately reduce the risk exposure of the deposit insurance fund.

Third, the stock-price effects analyzed in this study cover both the period before objective capital regulations were put in place beginning in late 1981 and the period after the new regulations were imposed. The market's reactions to new common stock issuance might be very different between the two periods. Thus, it may not be possible to infer much about the cost of common stock issuance in the new regulatory environment from results that average the stock-price reactions in the two periods. Similarly, even during the post-1981 period, some issuances were voluntary, while others were the result of regulatory pressure. In theory, one would expect voluntary issuances to have very different price effects than issuances required by the regulators.

Different price effects

To address these concerns, it is useful to distinguish between the periods before and after the change in capital regulation and between the price effects on banking organizations under regulatory pressure to boost capital and the effects on organizations that issued new common stock voluntarily. The results of such a comparison are displayed in the Figure. Banking organizations under regulatory pressure to boost capital (defined as BHCs not meeting the 1985 capital standard in 1981) are labeled "capital deficient" and all other BHCs are labeled "capital sufficient."

Stock-Price Effects of Common Equity Issuance



The Figure shows that during the post-1981 period, the stock-price effects of common stock issuance were *not* negative for capital sufficient banking organizations. In contrast, the effects were negative for capital deficient organizations, though they were somewhat less negative than in the earlier period.

One interpretation of these results is that the negative effects on capital deficient BHCs simply reflect a diminution in the value of the deposit insurance guarantee. According to this view, capital sufficient BHCs would not experience negative effects from issuing new stock since their greater initial level of capitalization meant that deposit insurance was not underpriced for them.

Another possible explanation (which is not necessarily inconsistent with the preceding argument) is that common stock issuance conveys

information about a capital deficient BHC's earnings prospects. Under the new capital guidelines, the market can readily determine when a BHC is under regulatory pressure to raise capital. Thus, when a capital deficient BHC issues common stock as opposed to other forms of capital, the market may treat the issuance as a signal that the regulators believe that such a BHC's earnings prospects are not good. After all, if the BHC's earnings prospects were good, the regulators probably would allow it to issue securities such as debt or preferred stock that require increased future payouts from earnings.

In any event, these results do not suggest that common stock is an inherently more costly source of funds. Instead, for well-capitalized BHCs, there appear to be no costs to raising additional capital through common stock issuance. In contrast, poorly capitalized BHCs find common stock issuance costly because of their financial condition.

Other securities

At the same time, however, there is evidence that the issuance of other types of securities such as straight subordinated (to deposits) debt, convertible subordinated debt, and preferred stock does not have negative stock-price effects. In fact, my study found no negative effects for such securities over the entire sample period, nor over the pre- and post-1981 periods, nor for the capital deficient and sufficient BHCs. Some analysts have concluded from such results that common stock *is* a more expensive form of capital.

One problem with such a conclusion is that the literature on securities issuance by industrial firms also does not find negative stock-price effects associated with debt and preferred stock issuance and yet industrial firms voluntarily issue common stock. If common stock really were more costly, industrial firms probably would not issue common stock.

Another problem with the view that debt and preferred stock are cheaper sources of protection for the insurance fund is that even though these securities technically are subordinated to deposits, over the period covered in my study, in fact, the bank regulators did not always treat these types of securities as subordinant in their handling of major bank failures. Specifically, in the resolution of the Continental Illinois problem, neither the debtholders nor the preferred stock holders of the BHC suffered losses, even though the common stock holders did. Consequently, the market may have viewed debt and preferred stock as implicitly insured. If so, there is no reason to expect the issuance of debt and preferred stock to diminish BHCs' stock prices.

A useful tool

The negative stock-price effects associated with common stock issuance by BHCs with weak capital positions help to explain why such organizations resist regulatory pressure to issue common stock to meet capital requirements. However, the absence of negative price effects for strongly-capitalized BHCs suggests that the high cost of common stock for poorly-capitalized institutions results from their financial condition, not because common equity is inherently more costly. Indeed, if capital regulation is having the desired effect of reducing the risk exposure of the deposit insurance fund, there is every reason to expect negative stock-price effects for those BHCs representing the greatest risks to the fund.

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